

Date: Monday, 11/21/2005 12:38:24 PM  
 User: Linda Lacelle

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : BRACKET
<b>Job Number</b> : 24883	
<b>Estimate Number</b> : 10809	
<b>P.O. Number</b> : N/A	<b>Part Number</b> : D3177043
<b>This Issue</b> : 11/21/2005 <b>S.O. No.</b> : N/A	<b>Drawing Number</b> : D3177 REV B2
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : N/A <b>Type</b> : MACHINED PARTS	<b>Drawing Revision</b> : B2
<b>Previous Run</b> : N/A	<b>Material</b> : N/A
<b>Written By</b> : <u>See comment below</u>	<b>Due Date</b> : 12/10/2005
<b>Checked &amp; Approved By</b> : <u>See comment below</u>	<b>Qty:</b> <u>2</u> <b>Um:</b> Each
<b>Comment</b> : Est Rev:B 03.01.27 Added Step 12 KJ/RF	

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
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1.0	M6061T6B1000X12000	6061-T6 Bar 1.0" x 12.0"
-----	--------------------	--------------------------



**Comment:** Qty.: 2.0747 f(s)/Unit Total: 4.1494 f(s)  
 Material: 6061-T6 (QQ-A-200/8) or (QQ-A-250/11) 1.00" thick(M6061T6B1.000x12.000 or M6061T6S1.000)  
 Batch: ~~M606~~ M12873

2.0	BAND SAW	BAND SAW
-----	----------	----------



**Comment:** BAND SAW  
 Cut blank: 47.40" x (12.000" +0.100/-0.000) BC 05.11.29 (Parts already cut)

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
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**Comment:** HAAS CNC VERTICAL MACHINING #1

1-Machine part as per Folio FA291 and Dwg D3177 BC 05.11.30  
M8 05/12/01  
 2-Deburr

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
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**Comment:** INSPECT PARTS AS THEY COME OFF MACHINE M8 05/12/01  
BC 05.11.30



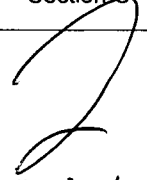

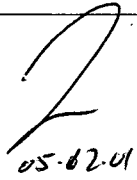
5.0	QC8	SECOND CHECK
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**Comment:** SECOND CHECK EP 05/12/01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: 19 Date: 05/12/09  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
05.12.01	3	One D3177-043: The 0.970 thickness on dwg is 0.967 The two $\phi 0.261$ holes are $\phi 0.268$		PART IS OK. See attached sheet for margin of safety.	 05.12.01	 05.12.01	 05.12.01	 05.02.01

NOTE: Date & initial all entries

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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET

Job Number: 24883

Part Number: D3177043

Job Number:



Seq. #: Machine Or Operation: Description :

6.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

SAD 13dec2005

7.0

D31775

Spacer



Comment: Qty.: 4.0000 Each(s)/Unit Total : 8.0000 Each(s)

Pick:

Qty Part Number Description Batch

4 D3177-5 Spacer B20295

FF 05.12.06

8.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Press D3177-5 Spacers as shown on Dwg D3177

FF 05.12.06

9.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

FC 05 12 07

10.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

M 05 12 07

11.0

D26906

Lanyard



Comment: Qty.: 1.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2690-6 Lanyard B19300

SB 05/12/07

12.0

AN960JD10

Washer



Comment: Qty.: 3.0000 Each(s)/Unit Total : 6.0000 Each(s)

Pick:

Qty Part Number Description Batch

3 AN960JD10 Washer M16066

SB 05/12/07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 11/21/2005 12:38:24 PM  
User: Linda Lacelle

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET

Job Number: 24883

Part Number: D3177043

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

BLRS010

Pip Pin



Comment: Qty.: 1.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 BLRS-010

Pip Pin

~~1114197~~ M 11892

SB 05/12/07

ADD  
418  
3

14.0

MS21042L3

Nut



Comment: Qty.: 1.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 MS21042L3

Nut (or -3)

M 17652

SB 05/12/07

3

15.0

MS27039111

Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 MS27039-1-11 Screw

M 9662

SB 05/12/07

3

16.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble as per Dwg D3177

SB 05/12/07

3

17.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

7-12-08

3

18.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: 84

6-25/14/08

(3)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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User: Linda Lacelle

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET

Job Number: 24883

Part Number: D3177043

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

SAC 05/12/09

(3)

05/12/09.

Job Completion



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

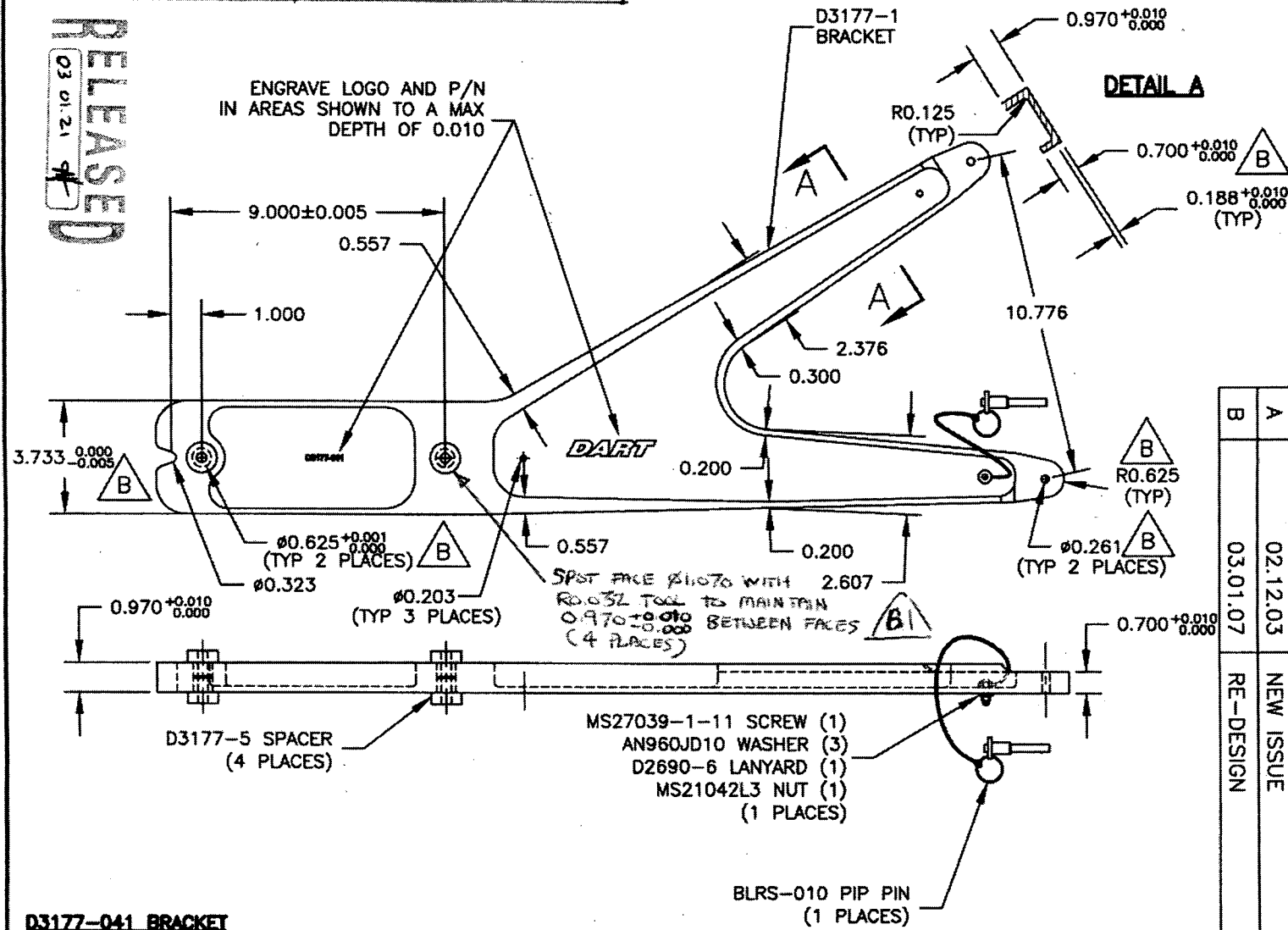


**DART**



DESIGN	DRAWN BY	DART AEROSPACE LTD HAMKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. B
DATE		D3177	SHEET 1 OF 3
03.01.07		TITLE	SCALE
		BRACKET	1:5
A	02.12.03	NEW ISSUE	
B	03.01.07	RE-DESIGN	

B1	03.02.25	UP #	ADD SPOT FACE
B2	03.11.24	UP #	ADD D3177-7



**D3177-041 BRACKET**

- 1) MACHINE D3177-1 PER DART DWG "D3177-1.SLDPRT"  
MATERIAL: 6061-T6 ALUMINUM BAR (QQ-A-250/11 OR QQ-A-200/8)  
(REF DART SPEC. M6061T6S OR M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 (PRIOR TO ASSEMBLY)  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3 (AFTER ASSEMBLY)
- 4) TOLERANCES ARE PER QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

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RELEASED  
03.01.21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

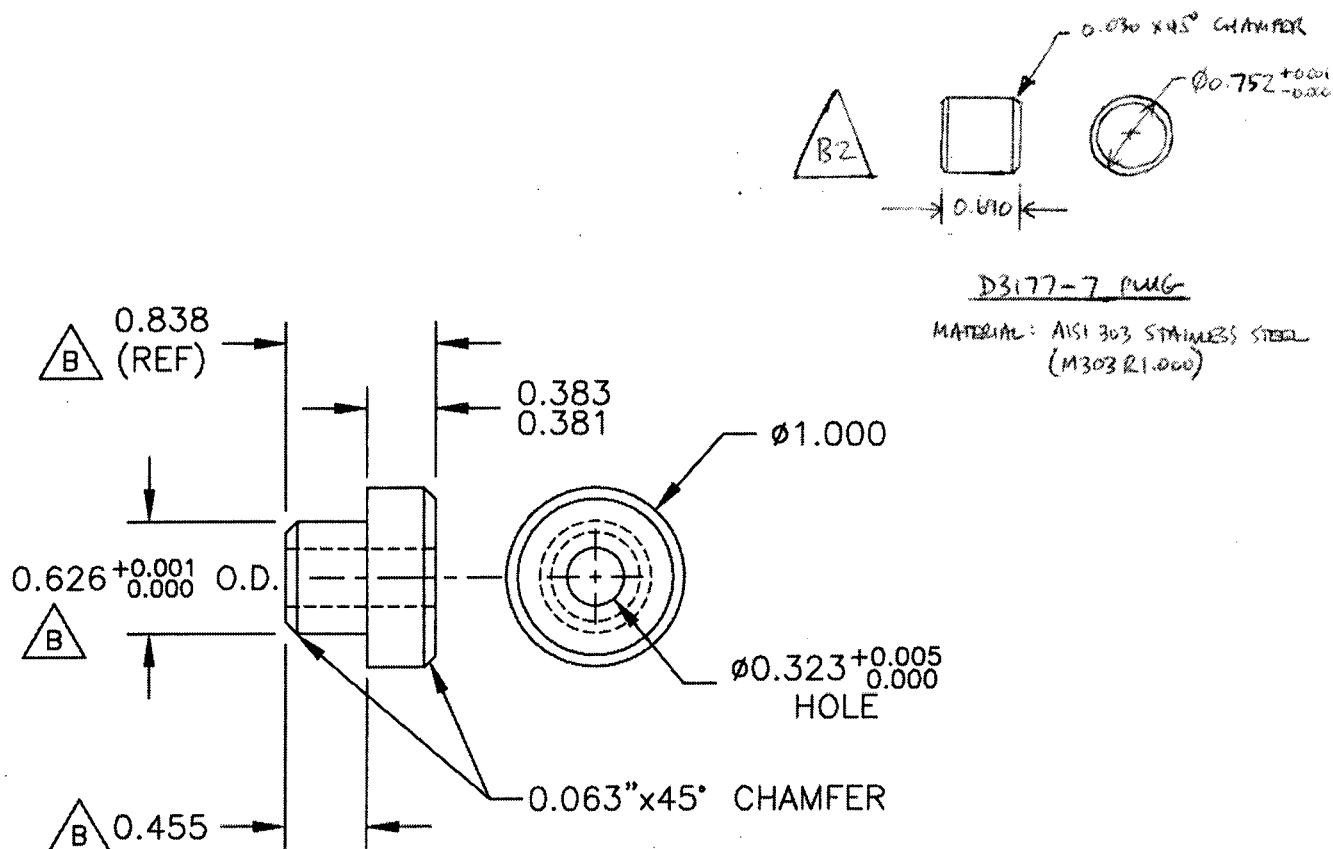
QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>#</i>	APPROVED <i>#</i>	DRAWING NO. D3177	REV. B SHEET 3 OF 3
DATE 03.01.07		TITLE BRACKET	SCALE 1:1



### D3177-5

- 1) MATERIAL: 6061-T6 ALUMINUM BAR  $\phi 1.000$   
(QQ-A-200/8 OR QQ-A-225/8)  
(REF DART SPEC. M6061T6R1.000)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

RELEASED  
03 01 21 *#*

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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# Job Costing Report

Dart Aerospace Ltd.  
Hawkesbury

Nov 18, 2005  
09:21 am

Work Order No	:	0024883	Department Code:	
Project Name	:	D3177-043	Burden Flags	: NNNNNNN
Project For	:	WK549	WO Status	: Open
Work Order Type	:	Main	Invoice State	: Not Invoiced
Main WO Number	:		Invoice Date	:
House Part Number	:	D3177-043	Invoice Number	:
Description	:	Bracket	Invoice Amount	: 0.00
Manufactured	:	Yes		
Amount Req'd	:	2	Order Entry No	:
Amount Done	:	0	OE Value	: 0.00
Start Date	:	11-18-05		
Est Finish Date	:	12-10-05	Est Margin	: 0.000%
Act Finish Date	:		Actual Margin	: 0.000%
Drawings Req'd	:	No		
Ok for Approval	:			
Approval Rec'd	:		\$0 Posted to Finished Goods	

	Estimated	Actual	Var. %	Posted	To Post
Material Cost	0.00	0.00	0.00	0.00	0.00
Engineering Hours	0.00	0.00	0.00		
Engineering Cost	0.00	0.00	0.00	0.00	0.00
Production Hours	0.00	0.00	0.00		
Production Cost	0.00	0.00	0.00	0.00	0.00
Packaging Hours	0.00	0.00	0.00		
Packaging Cost	0.00	0.00	0.00	0.00	0.00
OverHead Hours	0.00	0.00	0.00		
OverHead Cost	0.00	0.00	0.00	0.00	0.00
CNC Hours	0.00	0.00	0.00		
CNC	0.00	0.00	0.00	0.00	0.00
Misc. Hours	0.00	0.00	0.00		
Misc.	0.00	0.00	0.00	0.00	0.00
Burden	0.00	0.00	0.00		
Total Cost	0.00	0.00	0.00		
Margin	0.000	0.000			
Selling Cost	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done	0.00	0.00
Profits/(Loss)	0.00	0.00

DART AEROSPACE LTD		Work Order:
Description: Bracket		Part Number: D3177-3
Inspection Dwg: P3177-043 Rev: B		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
3.733	+0.000 -0.005	3.731	✓			
9.000	±0.005	9.002	✓			
1.000	±0.010	1.005	✓			
.575	±0.010	.572	✓			
.200	±0.010	.198	✓			
2.683	±0.010	2.681	✓			
.200	±0.010	.200	✓			
2.211	±0.010	2.208	✓			
φ.261	+0.006 -0.001	.267	✓			
10.776	±0.010	10.774	✓			
.563	±0.010	.561	✓			
.970	+0.010 -0.000	.971	✓			
.700	+0.010 -0.000	.703	✓			
φ.203	+0.005 -0.001	.201	✓			
φ.625	+0.001 -0.000	.626	✓			
.188	+0.000 -0.000	.194	✓			

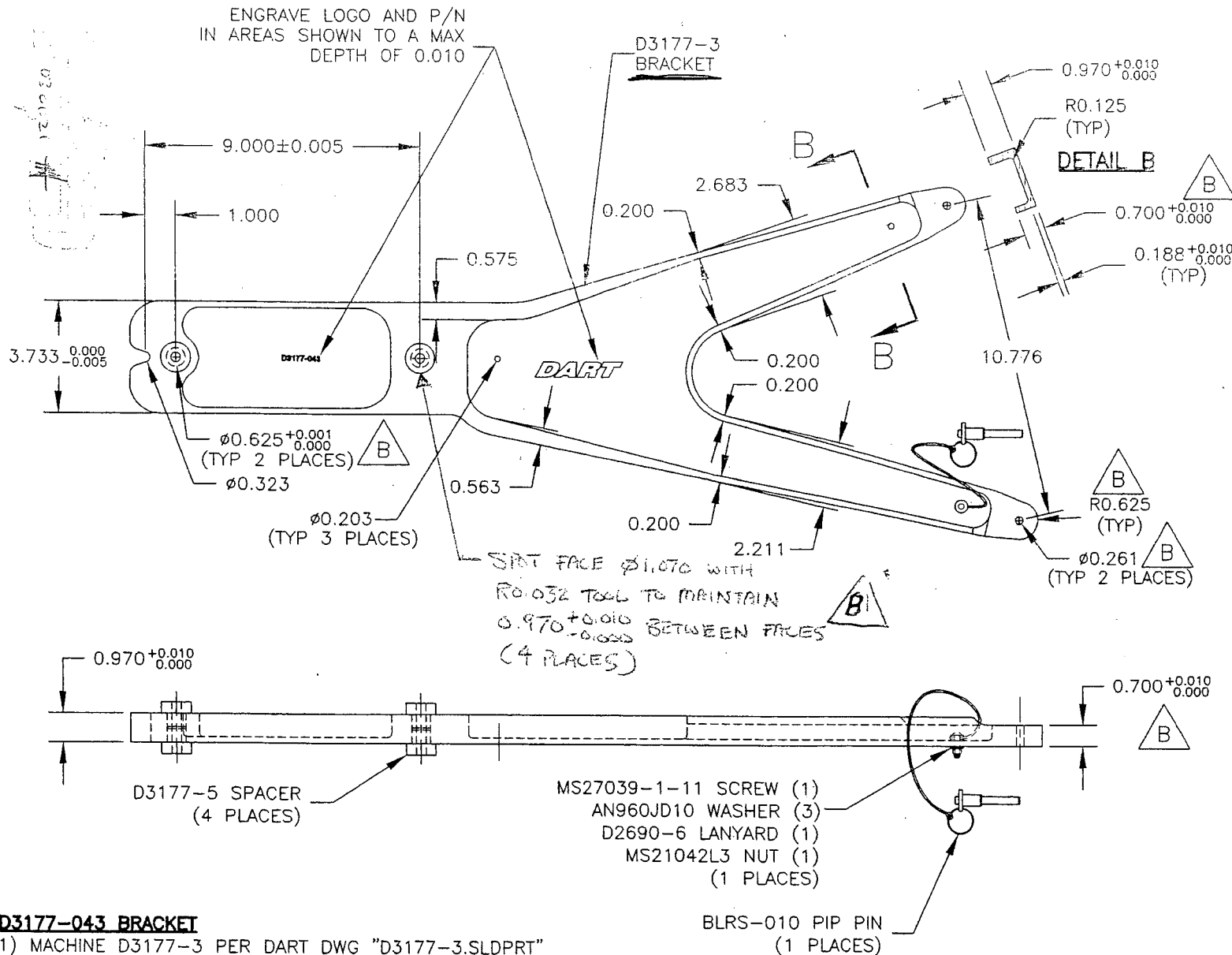
Measured by: BC	Audited by: SA	Prototype Approval:
Date: 05.11.30	Date: 05.11.30	Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/RF	

CONFIDENTIAL COPY



DESIGN	CP	DRAWN BY	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	CP	APPROVED	CP	DRAWING NO. D3177
DATE	03.01.07	TITLE	BRACKET	REV. B
		SCALE	1:5	SHEET 2 OF 3



#### D3177-043 BRACKET

- 1) MACHINE D3177-3 PER DART DWG "D3177-3.SLDPRT"  
MATERIAL: 6061-T6 ALUMINUM BAR (QQ-A-250/11 OR QQ-A-200/8)  
(REF DART SPEC. M6061T6S OR M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 (PRIOR TO ASSEMBLY)  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3 (AFTER ASSEMBLY)
- 4) TOLERANCES ARE PER QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

<u>Part</u>	<u>Section</u>	<u>Direction</u>	<u>(M)max</u> (in lb)	<u>Fcy/Ftu</u> (psi)	<u>I</u> (in <sup>4</sup> )	<u>c</u> (in)	<u>(M)all</u> (in lb)	<u>MS</u>
D3177-041	A-A	z	13791	34000	0.642	1.28	17053	0.24
D3177-041	A-A	x	1419	34000	0.056	0.67	2842	1.00
D3177-041	B-B	z	8497	34000	0.665	1.38	16384	0.93
D3177-041	B-B	x	1357	34000	0.043	0.72	2031	0.50
D3177-041	C-C	z	26775	34000	3.079	1.87	55982	1.09
*D3177-041	C-C	x	5880	34000	0.14	0.60	7933	0.35
*D3177-041	C-C	x	8820	38000	0.14	0.60	8867	0.01
					New values			
D3177-043	A-A	z	10494	34000	0.731	1.43	17380	0.66
D3177-043	A-A	x	1208	34000	0.044	0.72	2078	0.72
D3177-043	B-B	z	11343	34000	0.441	1.18	12761	0.12
D3177-043	B-B	x	1500	34000	0.042	0.71	2020	0.35

CRITICAL  
SECTION

Table from Section 6.3 (page 6) of  
SR-D130-701-1 Rev. A

UP 05.12.01